

EPA Region 10
Deemed Releasable

Incident: Multiple H2S Exposures at DCU
Date: 4/2/2012

Completion Date

Action Item No.

Recommendations / Corrective Actions from the Investigation Report (see Tab name for investigation reference):

H2S Leak - Barricade Response

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| 1. | Develop training for operations to provide guidance and practice on how to respond to a leak (barricades, monitoring, etc) and implement. | Assigned to: Sean Cornett
Due Date: 12/13/13 | 12/11/2013 | 643906 |
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H2S Fixed Area Monitor Alarms

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| 2. | Provide list of H2S monitors that need warning signs installed to OMS per area. | Assigned to: Mike Russell
Due Date: 2/10/13 | 1/15/2013 | 643908 |
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| 3. | Order signs and install at each H2S monitor location. Sign says "H2S may still be in area when alarm clears". | Assigned to: OMS for VPS/DCU, FCCU/Poly, HTU1/2
Due Date: 10/10/13 | 5/10/2013 | 643910 |
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Leak Path for H2S out of 15K1

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| 4. | Validate procedure with supporting training and field signage that ensures that 15K1 is de-pressured, purged, blocked in and verified before the seal oil system is shutdown. | Assigned to: Jeff Solomon
Due Date: 7/12/13 | 7/8/2013 | 643913 |
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| 5. | Replace the 2nd stage discharge block valve that was leaking by during this incident. | Assigned to: Marshall Basham
Due Date: 7/12/13 | 1/21/2013 | 643914 |
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15K1 lube oil reservoir vent

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| 6. | Reroute vent on 15K1 lube oil reservoir to safe location. | Assigned to: Marshall Basham
Due Date: 7/12/13 | 1/21/2013 | 643915 |
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| 7. | Evaluate sizing and location of 15K1 lube oil reservoir vent in the event of an overpressure of the reservoir by 15K1 seal leak. Issue construction package as required. Create new FOUNTAIN item to track installation to completion to be assigned to unit OMS. | Assigned to: Guy Masters
Due Date: 12/12/13 | 12/11/2013 | 643917 |
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Lateral Recommendations

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| 8. | Discuss work variance issuance at the RLT Learning Session for this investigation. | | 5/17/2012 | |
| | Create notification to engineer safe access to 15K1 block valves during 2017 DCU Turnaround and track to completion. Consider replacing single block with double block and bleed and relocating the valves to a | Assigned to: Marshall Basham | | |
| 9. | different location. | Due Date: 12/12/17 | 1/21/2013 | 643920 |

Communication & Auditing

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| | Consider leading an engagement conversation around working at heights issue with 15K1 valve; package drafted. | Assigned to: Goal Zero Governance Team – Sean Cornett | | |
| 10. | | Due Date: 12/12/13 | 12/11/2013 | 643922 |
| | Create communication package about causal findings to be shared with plant by email. <i>(COMPLETED)</i> | | | |
| | Evaluate 15K1 isolation procedure knowledge in organization (operators, STLs, and OMS). Not looking to see if procedure exists; looking to see if operators understand issue with preventing H2S contamination of lube oil by line up procedure. Feedback to unit | Assigned to: Jeff Solomon | | |
| 12. | trainer and operators as appropriate. | Due Date: 3/1/15 | 7/8/2013 | 643926 |
| | Evaluate operator knowledge of required and recommended response protocols to H2S leaks (including barricading practices) in units with high H2S process streams (e.g., DCU, WWS). Feedback to | Assigned to: Sean Cornett | | |
| 13. | area managers and design of training as appropriate. | Due Date: 3/1/15 | 2/28/2015 | 643929 |